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we are accustomed to understand by this name, or to which Battell gave the name of Pongo, or 'greater monster.' They are supposed by many to have been chimpanzees.

C. R. EASTMAN.

HARVARD UNIVERSITY.

WORK OF THE DEPARTMENT OF TER-
RESTRIAL MAGNETISM OF THE
CARNEGIE INSTITUTION OF
WASHINGTON FOR 1905.

Office Work.

I. *Continuation of the study of the secular variation* and compilation of data and preparation for publication on a comprehensive, uniform plan. [The investigations have already progressed far enough to have warranted beginning at once the observational work referred to below.]

II. Discussion and publication of the data on the *magnetic perturbation* observed during the *eruption of Mont Pelée*, Martinique, 1902. [It is hoped to have this work in published form by end of year.]

III. *A general study of the laws of the diurnal variation* to serve as the basis for determining corrections and their reliability for the reduction of field observations.

IV. *Special investigation of magnetic storms* with the view of determining a working method for the discussion and analysis of such fluctuations. [These studies are being conducted under the direction of Professor Adolf Schmidt, at Potsdam, with the aid of funds supplied by the department. Professor Schmidt hopes to be able to contribute a paper on the subject towards the close of the year.]

V. Continuation of a *card catalogue* of publications and investigations in terrestrial magnetism and terrestrial electricity and allied subjects and collecting of information of work done and being done so as to avoid as far as possible needless duplication.

Field Work.

In pursuance of the plan for the completion of a general magnetic survey of the accessible regions of the globe within a period of fifteen to twenty years and of the general investigation of the secular variation, the following

observational work is now in actual progress. In all likelihood, the requisite funds for this vast undertaking will be supplied chiefly by the Carnegie Institution of Washington, and in fact it is the expectation that the operations under the auspices of this institution will probably cover about three fourths of the total area to be surveyed. However, the successful execution of the plan requires the harmonious cooperation and concerted action of all civilized countries; accordingly, definite steps in this direction will be formulated in conformity with the advice of leading investigators.

A. *Magnetic Survey of the North Pacific Ocean.*—A wooden sailing-vessel, the brig, *Galilee*, of San Francisco, built in 1891, length 132.5 feet, breadth 33.5 feet, depth 12.7 feet, displacement about 600 tons, carrying a crew of eight men and sailing-master, has been chartered and is now being fully adapted for the purposes of the expedition.

The scientific leader and commander of the vessel—Mr. J. F. Pratt—is one of the most efficient officers of the United States Coast and Geodetic Survey. Commander Pratt has had thirty years' experience in astronomical, geodetic, hydrographic and magnetic work, and has had command both of sailing-vessels and of steamers engaged in coast-survey work. By the courtesy of the Secretary of Commerce and Labor and the Superintendent of the Coast and Geodetic Survey he has been granted the necessary furlough and will enter the temporary employ of the Carnegie Institution for the purpose of assisting in the inauguration of the magnetic survey of oceanic areas. The other members of the scientific corps will be Dr. J. Hobart Egbert, magnetic observer, surgeon and naturalist, and Mr. J. P. Ault, magnetic observer.

The first cruise will be in a region where the various methods to be employed can fully be tested and controlled, viz.: San Francisco, San Diego, Honolulu, Umanak, Aleutian Islands, Sitka. The magnetic elements are to be determined as follows: Declination by two compasses (a liquid one and a dry one) using various azimuth devices, horizontal inclination by a new method being devised which,

by some trials already made, appears promising, total intensity and dip with an L. C. dip circle. The expedition expects to leave San Francisco about the middle of July of this year. [It is gratifying to report that the German government has assured the president of the Carnegie Institution that its Samoan magnetic observatory will be maintained until 1909, to assist in the magnetic survey of the Pacific Ocean.]

B. Land Work.—Mr. J. P. Ault, magnetic observer, while temporarily assigned on the coast-survey steamer *Bache*, for securing the necessary training in magnetic work on a cruise from Baltimore to Panama, besides taking part in the sea work, has determined the three magnetic elements at the following stations: Norfolk (Virginia), Key West and Miami (Florida), Kingston (Jamaica), Colon (Panama), Havana, Mantanzas, Batabano and Pinar del Rio (all in Cuba) and Valdosta (Georgia). At Havana comparisons were also made with the instruments of the Colegio de Belen. Thus, most important secular variation and distribution data have been obtained.

Mr. D. C. Sowers, magnetic observer, accompanied the new coast-survey steamer *Explorer* from Baltimore to Porto Rico, determined the magnetic elements on land at Norfolk (Virginia), San Juan and Vieques (Porto Rico), and took part in the sea work. He is now engaged in determining the magnetic elements on various islands of the Lesser Antilles. Mr. G. Heimbrod, surveyor, of Suva, Figi Islands, enters the employ of the department the coming August, as magnetic observer. After assisting Dr. Franz Linke, in charge of the German magnetic observatory at Apia, Samoa, and securing the necessary experience in magnetic and electric work, he will be engaged in determining the magnetic elements on various islands in the South Pacific.

Definite arrangements are furthermore being perfected for securing in the near future observations along the coasts in Canada, Mexico, Central American countries, South America and China, while the oceanic survey is progressing. The precise details will be published later.

[In connection with above work it has become essential to make some experimental investigations at Washington, with the special view of ascertaining the cause of outstanding instrumental differences, and the reliability in the application of corrections derived by comparison, and the changes in the corrections for any particular set of instruments when used in various magnetic latitudes. These studies have an important bearing upon the inter-comparison and reduction of observatory standards, as well as the standardization and testing of instruments designed for field use.]

C. Eclipse Work.—Besides the cooperation already promised in the proposed magnetic and electric work during the eclipse of August 30, 1905, the department will have a station of its own at Palma, Majorca Island. The atmospheric electricity observations will be made by Professors Elster and Geitel and Dr. Harms. It will also have one or two stations in Canada, as may be necessary. Mr. J. E. Burbank, magnetician, will have charge of the work in atmospheric electricity in this country, and with that purpose in view has spent three months in Germany with Professors Wiechert, Elster and Geitel familiarizing himself with methods and perfecting the instrumental outfit.

D. Magnetic Disturbances.—For studying the correlation between solar phenomena and magnetic disturbances, cooperative work has been entered into between the Solar Observatory and the department of terrestrial magnetism of the Carnegie Institution. Two direct recording variometers, giving a visible record of the magnetic fluctuations and ringing an alarm for disturbances of a certain magnitude, are now being constructed under the direction of Dr. W. G. Cady, research magnetician, in accordance with his design.

Should the device prove successful, additional instruments will be constructed by the department and supplied to institutions ready to cooperate.

[This is the initial step towards the working out of a general plan for enlisting in magnetic work the cooperation of certain favorably situated and well-established institu-

tions, such as astronomical observatories, for example, in order to assist in bringing about a more uniform distribution than prevails at present, of stations contributing magnetic data.]

In the near future *additional appointments are to be made* in the department, the salaries ranging from \$1,000 to \$2,500 per annum, in accordance with qualifications and position.

The places to be filled call for a chief physicist, experienced magneticians capable of conducting investigations, magnetic observers for sea and land duty, and computers.

The appointments are not restricted to citizens of the United States.

Applications should contain full information regarding the applicant's life, education and experience. They may be sent in now and should be addressed to the Director, Department Terrestrial Magnetism, The Ontario, Washington, D. C., U. S. A.

L. A. BAUER,
Director.

May 25, 1905.

PRESIDENT ROOSEVELT ON THE REWARDS OF SCHOLARSHIP.¹

THE general opinion of the community is bound to have a very great effect even upon its most vigorous and independent minds. If in the public mind the career of the scholar is regarded as of insignificant value when compared with that of a glorified pawnbroker, then it will with difficulty be made attractive to the most vigorous and gifted of our American young men. Good teachers, excellent institutions and libraries are all demanded in a graduate school worthy of the name. But there is an even more urgent demand for the right sort of student. No first-class science, no first-class literature or art, can ever be built up with second-class men.

The scholarly career, the career of the man of letters, the man of arts, the man of science, must be made such as to attract those strong and virile youths who now feel that they can only turn to business, law or politics. There is no one thing which will bring about this

desired change, but there is one thing which will materially help in bringing it about, and that is to secure to scholars the chance of getting one of a few brilliant positions as prizes if they rise to the first rank in their chosen career. Every such brilliant position should have as an accompaniment an added salary, which shall help indicate how high the position really is; and it must be the efforts of the alumni which can alone secure such salaries for such positions.

As a people I think we are waking up to the fact that there must be better pay for the average man and average woman engaged in the work of education. But I am not speaking of this now; I am not speaking of the desirability, great though that is, of giving better payment to the average educator; I am speaking of the desirability of giving to the exceptional man the chance of winning an exceptional prize, just as he has the chance to do in law and business.

In business at the present day nothing could be more healthy than an immense reduction in the money value of the exceptional prizes thus to be won; but in scholarship what is needed is the reverse. In this country we rightly go upon the theory that it is more important to care for the welfare of the average man than to put a premium upon the exertions of the exceptional. But we must not forget that the establishment of such a premium for the exceptional, though of less importance, is nevertheless of very great importance. It is important even to the development of the average man, for the average of all of us is raised by the work of the great masters.

It is, I trust, unnecessary to say that I appreciate to the full the fact that the highest work of all will never be affected one way or the other by any question of compensation. And much of the work which is really best for the nation must from the very nature of things be non-remunerative as compared with the work of the ordinary industries and vocations. Nor would it ever be possible or desirable that the rewards of transcendent success in scholarship should even approximate, from a monetary standpoint, the rewards in other vocations.

¹ From his address to the alumni of Harvard College.